

## CLAIMS

1. A scheduler for scheduling data transmission in a communication system, the scheduler comprising:
  - first logic to determine if each of one or more remote devices corresponding to one or more data transmission indicators has a capacity reservation in an admission profile; and
  - second logic to allocate capacity in accordance with a data transmission indicator when a capacity reservation is found.
2. The scheduler of claim 1, wherein the second logic limits the allocation in accordance with the capacity reservation.
3. The scheduler of claim 2, wherein the second logic further allocates remaining capacity, if any, in response to any unsatisfied data transmission indicators in order of increasing size of the unallocated portion of the data transmission indicator.
4. The scheduler of claim 1, wherein each of a plurality of data transmission indicators is associated with one of a plurality of service levels.
5. The scheduler of claim 4, wherein the second logic allocates capacity in response to one or more transmission indicators associated with one or more of a first group of service levels in accordance with the admission profile, and allocates remaining capacity, if any, in response to one or more transmission indicators associated with one or more of a second group of service levels.
6. The scheduler of claim 5, wherein the first group comprises one or more quality of service guaranteed service levels.
7. The scheduler of claim 5, wherein the second group comprises one or more best effort service levels.

8. A communication device, operable with a plurality of remote devices, and operable with an admission profile comprising a plurality of time periods and a capacity reservation for zero or more remote devices in each of the plurality of time periods, the communication device comprising:

a scheduler for, during each of the plurality of time periods, for each of a plurality of data transmission indicators, determining if a remote device corresponding to the data transmission indicator has a capacity reservation in the admission profile and for allocating capacity in accordance with the data transmission indicator.

9. The communication device of claim 8, wherein the scheduler limits the allocation in accordance with the capacity reservation.

10. The communication device of claim 9, wherein the scheduler further allocates remaining capacity, if any, in response to any unsatisfied data transmission indicators in order of increasing size of the unallocated portion of the data transmission indicator.

11. The communication device of claim 8, further comprising a receiver for receiving a request message comprising a data transmission indicator.

12. The communication device of claim 8, further comprising one or more data queues, a data transmission indicator generated with the presence of data within a queue.

13. The communication device of claim 8, further comprising a transmitter for transmitting one or more grant messages indicating the allocated capacity.

14. The communication device of claim 8, further comprising an admissions control unit for:

receiving a request for admission comprising flow parameters corresponding to a data flow from a remote device;

conditionally admitting the flow when the flow parameters, if combined with the admission profile, would not exceed the system capacity; and

modifying the admission profile to incorporate the flow upon admission.

15. The communication device of claim 8, wherein each remote device may correspond to a plurality of data transmission indicators, each indicator associated with a service level.

16. The communication device of claim 15, wherein the scheduler allocates capacity in response to one or more transmission indicators associated with one or more of a first group of service levels in accordance with the admission profile, and allocates remaining capacity, if any, in response to one or more transmission indicators associated with one or more of a second group of service levels.

17. The communication device of claim 16, wherein the first group comprises one or more quality of service guaranteed service levels.

18. The communication device of claim 16, wherein the second group comprises one or more best effort service levels.

19. The communication device of claim 15, wherein the scheduler:

allocates capacity in response to one or more transmission indicators associated with one or more remote devices having a capacity reservation in the admission profile, the capacity allocated for each remote device limited to the respective capacity reservation;

then allocates remaining capacity, if any, in response to unsatisfied transmission indicators associated with a first service level; and

then allocates remaining capacity, if any, in response to transmission indicators associated with a second service level.

20. The communication device of claim 19, wherein the scheduler further allocates remaining capacity, if any, in response to transmission indicators for data in one or more future time periods associated with the first service level prior to the allocation in response to indicators associated with the second service-level.

21. The communication device of claim 19, wherein the allocation in response to unsatisfied indicators is performed in order of increasing size of the unallocated portion of the data transmission indicator.

22. A communication system comprising:

a plurality of remote devices;

an admission profile comprising a plurality of time periods and a capacity reservation for zero or more remote devices in each of the plurality of time periods; and

a communication device comprising a scheduler for, during each of the plurality of time periods, for each of a plurality of data transmission indicators, determining if a remote device corresponding to the data transmission indicator has a capacity reservation in the admission profile and for allocating capacity in accordance with the data transmission indicator.

23. A method for scheduling, comprising:

receiving one or more transmission indicators from one or more remote devices;

and

granting one or more of the transmission requests in accordance with an admission profile.

24. The method of claim 23, further comprising:

receiving a request for admission comprising flow parameters corresponding to a data flow from a remote device;

conditionally admitting the flow when the flow parameters, if combined with the admission profile, would not exceed the system capacity; and

modifying the admission profile to incorporate the flow upon admission.

25. A method for scheduling, comprising:

determining, for each of a plurality of time periods and for each of a plurality of data transmission indicators, whether a remote device corresponding to the data transmission indicator has a capacity reservation in an admission profile; and

allocating capacity in accordance with the data transmission indicator when a capacity reservation is in the admission profile.

26. The method of claim 25, wherein one or more of the data transmission indicators are received from one or more remote devices.

27. The method of claim 25, wherein one or more of the data transmission indicators are generated in response to the presence of data within a queue.

28. The method of claim 25, wherein each of the plurality of data transmission indicators corresponds to one of a plurality of service levels.

29. The method of claim 28, wherein capacity is allocated first for data transmission indicators corresponding to a first service level, and remaining capacity, if any, is allocated to transmission indicators corresponding to one or more second service levels.

30. A method for scheduling, comprising:  
receiving a plurality of transmission indicators corresponding to a plurality of remote devices;  
accessing an admissions profile to determine if one or more transmission indicators have an associated reservation in the admissions profile;  
allocating capacity according to the located reservations;  
allocating remaining capacity to remaining transmission indicators; and  
transmitting one or more grant messages in accordance with the capacity allocation.

31. A device, comprising:  
means for receiving one or more transmission requests from one or more remote devices; and  
means for granting one or more of the transmission requests in accordance with an admission profile.

32. The device of claim 31, wherein the admission profile comprises a plurality of frames, and zero or more capacity values associated with a remote device per frame.

33. The device of claim 31, wherein the admission profile is created in accordance to a duty factor and a frame phase for one or more data flows.

34. The device of claim 31, further comprising:

means for receiving a request for admission comprising flow parameters corresponding to a data flow from a remote device;

means for conditionally admitting the flow when the flow parameters, if combined with the admission profile, would not exceed the system capacity; and

means for modifying the admission profile to incorporate the flow upon admission.

35. A communication system comprising:

means for receiving one or more transmission requests from one or more remote devices; and

means for granting one or more of the transmission requests in accordance with an admission profile.

36. Computer readable media operable to perform a method comprising the following:

receiving one or more transmission requests from one or more remote devices; and

granting one or more of the transmission requests in accordance with an admission profile.

37. The media of claim 36, further operable to perform the following:

receiving a request for admission comprising flow parameters corresponding to a data flow from a remote device;

conditionally admitting the flow when the flow parameters, if combined with the admission profile, would not exceed the system capacity; and

modifying the admission profile to incorporate the flow upon admission.